

REMARKS

With the present amendments and new claims, claims 1-21, 23, and 25-32 are pending in the application.

The amendments to the claims find support in the specification and claims as originally filed. The amendments to Claims 1, 21, and 25 regarding peptide nucleic acids of about 25 to about 70 base in length tethered to a microarray surface find support in the specification and claims as originally filed, for example, at page 8, line 22, page 9, lines 10-11, and page 16, line 11, and elsewhere in the application as filed.

The amendments to Claims 21, 23, 25, and 28 regarding updating parameters find support in the specification and claims as originally filed, for example, at page 15, lines 25-30, particularly line 27, and elsewhere in the application as filed.

The amendments to Claims 23 and 28 regarding application of a rate algorithm adapted to detect changes between compared parameters and profiles find support in the specification and claims as originally filed, for example, at page 20, lines 27-29 to page 21, lines 1-2, and elsewhere in the application as filed.

New Claims 31 and 32 find support in the specification and claims as originally filed, differing from Claims 1-5 only in the underlined portion of the phrase "wherein said hybridization information related to said patient comprises hybridization information collected from array comprising peptide nucleic acid (PNA) probes and/or oligonucleotide probes comprising about 25 to about 70 bases in length tethered to a microarray surface contacted with a clinical sample related to said patient" (the underlined portion being included in new Claim 31). Support for oligonucleotide arrays may be found in the specification, for example, at page 9, lines 3-14 (particularly 10-11).

No new matter is added by way of the amendments or new claims.

Claims 1-21, 23 and 25-30 stand rejected under 35 U.S.C. §103(a) as allegedly obvious over Caple et al. (WO 99/04043; hereafter "Caple") in view of Kuga et al. (U.S. Patent No. 5,936,078; hereafter "Kuga").

The Rejections Under 35 U.S.C. §103(a)

In order to establish a prima facie case of obviousness, there must be: 1) some suggestion or motivation in the art or in the knowledge generally available to one of

ordinary skill in the art, to modify or to combine the reference teachings; 2) there must be a reasonable expectation of success; and 3) the prior art references must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must be found in the prior art, and not based on the Applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Claims 1-21, and 25-27 are directed to systems and methods which require, among many other elements, the elements of an array comprising peptide nucleic acid (PNA) probes comprising about 25 to about 70 bases in length tethered to a microarray surface. Applicants note that "tethered" is not merely "bound" or "affixed" to a solid substrate, as shown by the sentence "A 'probe' is a nucleic acid sequence, optionally tethered, affixed, or bound to a solid surface such as a microarray or chip." (page 6, lines 22-23 of the application as filed), in which the probe is described as "optionally tethered, affixed, or bound." The word "tethered" indicates the presence of a tether, that is, the PNA probes are indirectly attached to the microarray via a tether.

Applicants note that Caple fails to provide a PNA probe, a probe (of any kind) tethered to a microarray, a PNA probe having a length of about 25 to about 70 bases, or any of combination of these elements, and that Kuga also fails to provide any of these elements or combination of these elements. Caple and Kuga fail to provide methods comprising updating hybridization parameters and profiles. Moreover, neither Caple nor Kuga suggest such elements, nor suggest that Caple and Kuga could be or should be combined to provide such elements. Caple and Kuga also fail to provide, or to suggest providing, these elements in combination with the many other elements of Claims 1-21, and 25-27. Failing to provide or suggest these elements, even if combined, the combination of Caple and Kuga fails to provide any reasonable expectation of success for such a combination of elements.

Similarly, neither Caple nor Kuga provide methods for diagnosing a physiological condition and recommending treatment comprising collecting information from a PNA chip, proteomics chip, or oligonucleotide chip wherein the methods comprise analyzing data using artificial intelligence comprising application of a rate algorithm adapted to

detect changes between compared parameters and a profile, and updating stored parameters and profiles. However, Claims 23 and 28-30 include such elements, among many other elements. Neither Caple nor Kuga suggest such elements, nor suggest that Caple and Kuga could be or should be combined to provide such elements. Caple and Kuga also fail to provide, or to suggest providing, these elements in combination with the many other elements of Claims 23 and 28-30. Failing to provide or suggest these elements, the combination of Cable and Kuga together also fails to provide any reasonable expectation of success for such a combination of elements.

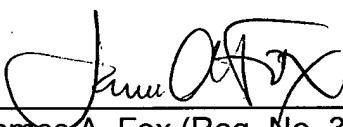
Accordingly, applicants respectfully submit that the combination of Caple and Kuga together fails to provide all missing elements of Claims 1-21, 23, and 25-30, and that the rejection of Claims 1-21, 23 and 25-30 under 35 U.S.C. §103(a) is overcome.

CONCLUSION

Applicants respectfully requests consideration and allowance of all pending claims. The Examiner is invited to contact the undersigned attorney at the telephone number indicated below should he find that there are any further issues outstanding.

Please charge any fees, including fees for extension of time, or credit overpayment to Deposit Account No. 08-1641 referencing Attorney's Docket No. 25527-0005.

Respectfully submitted,

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